Geometry   Name _____
Chapter 2 Review   Date _____ Per _____

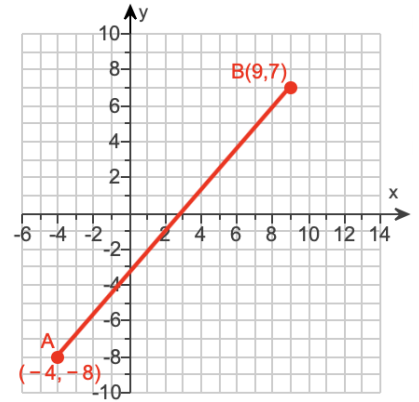## Spiral Review

1. Find a counter example to show that the statement is not true. If angles are supplementary then they form a linear pair.

2. Find the coordinates of the point $\frac{7}{10}$ of the way from A to B.
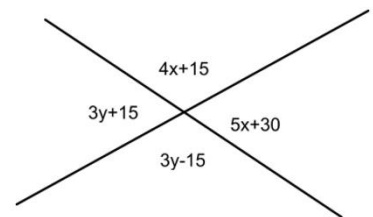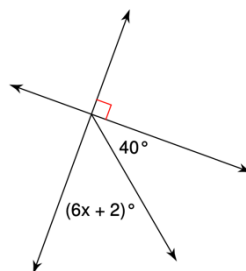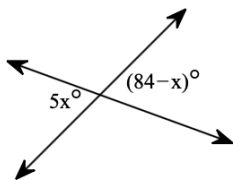

3. Consider the statement: If James has 2 dimes, then he has at least 20 cents.
   a. Is this a true statement? Justify your reasoning.

   b. Write the converse of the given statement. Is the converse a true statement? Explain.
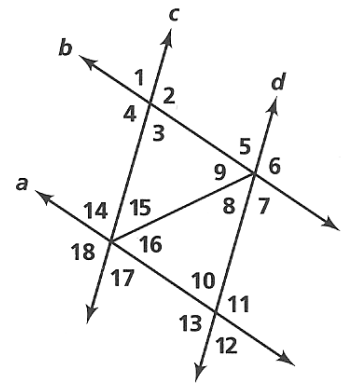
4. Find the value of the variable.

Properties of Parallel Lines
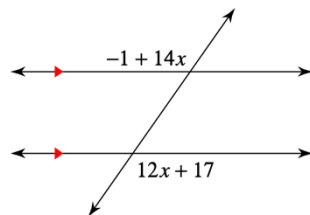
Section: Properties of Parallel Lines

Use the figure to answer each question in this section.

5. If $c \parallel d, a \parallel b,$ and $m\angle 12 = 55°,$ then $m\angle 4 =$ _____

6. If $\angle 15 \cong \angle 8$ then which two lines are parallel? Explain your answer.
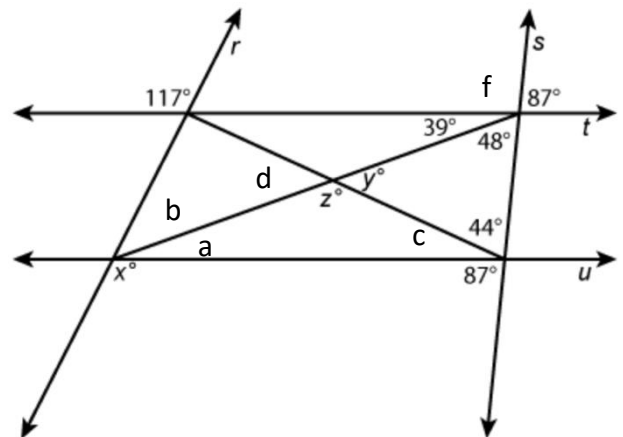
7. Find the value of x.

$$-1 + 14x$$

$$12x + 17$$

8. Use the figure to the right. Lines *a, b, c,* and *d* intersect as shown.
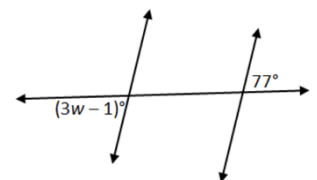
   a. Which pairs of lines are parallel?

   b. Find the values of the variables.
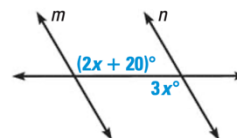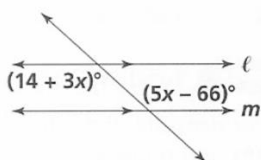
a = _____   b = _____   c = _____   d= _____

f = _____   x = _____   y = _____   z = _____

9. Find the value of the variable that will make the lines parallel.
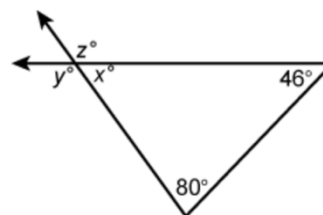
$(14 + 3x)°$ $(5x - 66)°$

$150°$ $(3x - 15)°$

$(2x + 20)°$ $3x°$

$77°$ $(3w - 1)°$
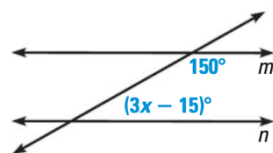
Section: Parallel Lines and the Triangle Sum – Theorem

10. Find the value of the variable.

$92°$

$x°$

$63°$

$41°$

$115°$

$x°$
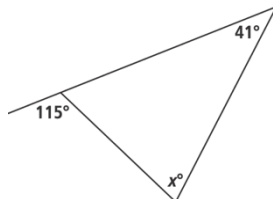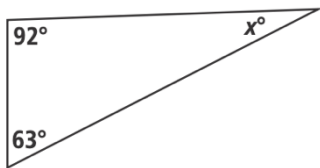
11. Given the figure, find the value of the variables.

$z°$

$y°$ $x°$

$46°$

$80°$

12. Find the value of x.

$x + 59$

$84°$ $x + 51$
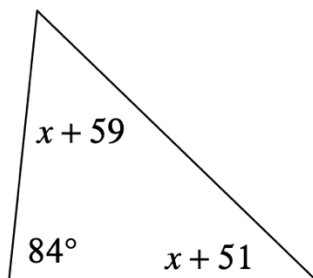
Section: Slopes of Parallel and Perpendicular Lines.

13. Are the lines, parallel, perpendicular, or neither? $y = \frac{2}{3}x + 5$

$3x + 2y = 8$

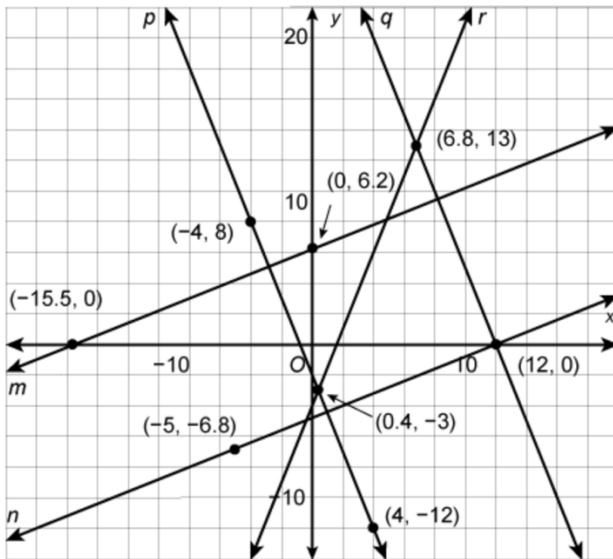14. Write an equation (slope-intercept form) for the line that is parallel to $y = -4x + 5$ that contains the point (1, -6)

15. Write an equation (slope-intercept form) for the line that is perpendicular to $y = 3x - 2$ and passes through the point (9, -2)
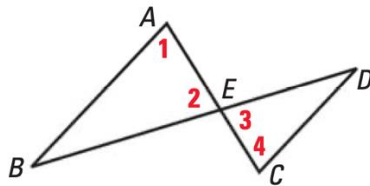
16. Given the following figure, find which lines will be parallel and perpendicular. Verify using slopes.

Section: Proofs

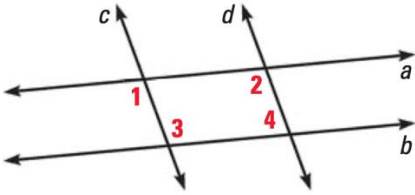**GIVEN** ▶ $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$
PROVE ▶ $\overline{AB} \parallel \overline{CD}$

Statement	Reason
1.	1.
2.	2.
3.	3.
4.	4.

GIVEN ▶ $a \parallel b$, $\angle 2 \cong \angle 3$
PROVE ▶ $c \parallel d$

Statement	Reason
1.	1.
2. $\angle 1 \cong \angle 3$	2.
3.	3. Substitution Property
4.	4.

Given: $m \parallel n \text{ and } a \parallel b$
Prove $\angle 4 \text{ is supplementary } \angle 15$
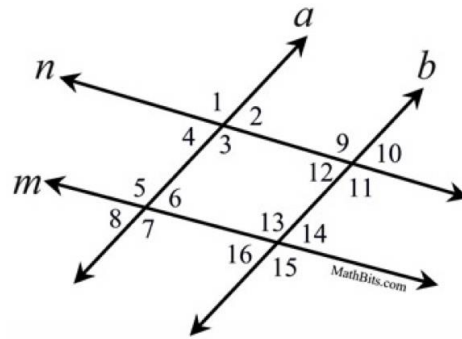
Statement	Reason
1.	1.
2. $\angle 4 \cong \angle 10$	2.
3. $\angle 10 \text{ and } \angle 15 \text{ are supplementray}$	3.
4.	4. Definition of Supplementary Angles
5. $\angle 4 = \angle 10$	5.
6.	6. Substitution Property
7.	7.